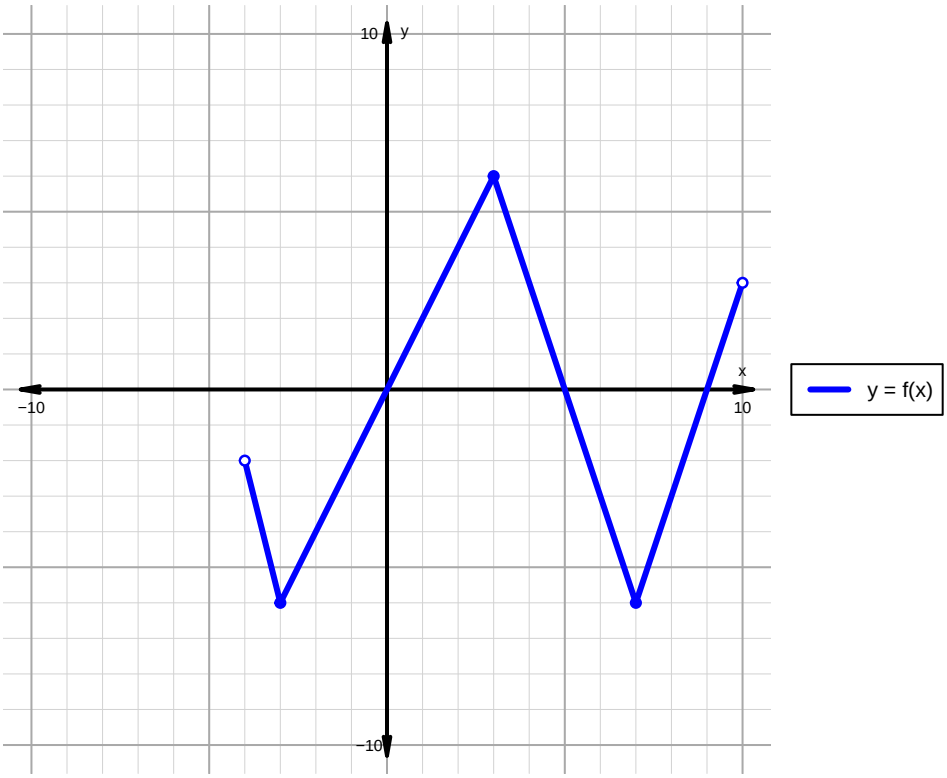
Name: Date:

Intervals, Transformations, and Slope Solution (version 16)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(0, 5) \cup (9, 10)$
Negative	$(-4, 0) \cup (5, 9)$
Increasing	$(-3, 3) \cup (7, 10)$
Decreasing	$(-4, -3) \cup (3, 7)$
Domain	$(-4, 10)$
Range	$(-6, 6)$

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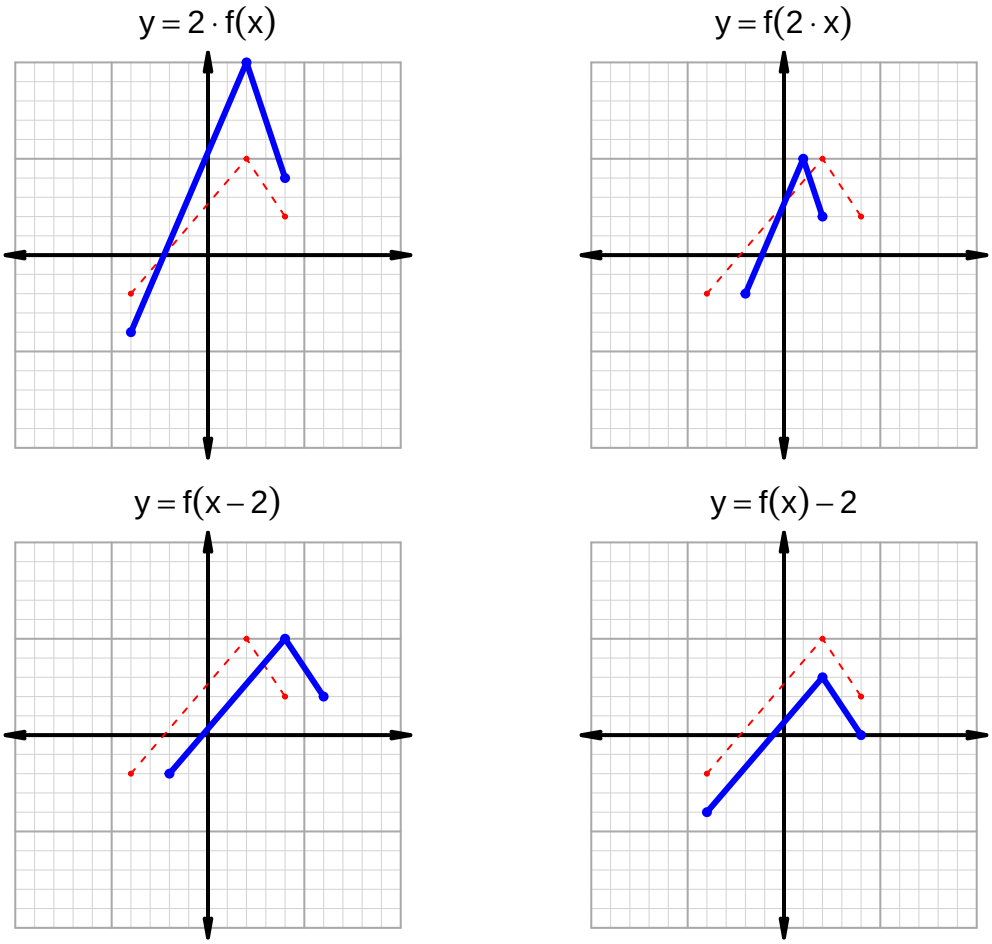
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 31$ and $x_2 = 73$. Express your answer as a reduced fraction.

x	$g(x)$
16	31
31	70
70	73
73	16

$\frac{f(73)-f(31)}{73-31} = \frac{16-70}{73-31} = \frac{-54}{42}$

The greatest common factor of -54 and 42 is 6. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-9}{7}$$